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PRIVIES AND WATER-CLOSETS
AT RAILWAY-STATIONS.

BY

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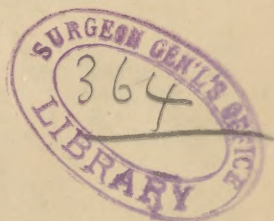
MEMBER OF THE

STATE BOARD OF HEALTH,

AND ITS COMMITTEE ON DISPOSAL OF EXCRETA AND DECOMPOSING ORGANIC MATTER.

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PRIVIES AND WATER-CLOSETS AT RAIL- WAY STATIONS.

IN the month of February, 1878, the late Dr. J. H. Beech, of Coldwater, addressed to the Secretary of this Board the following letter:—

H. B. BAKER, M.D., *Secretary Michigan State Board of Health.*

Dear Doctor,—I have just been writing a letter to the Superintendent of the Michigan Division of the Lake Shore and Michigan Southern Railroad, in part of which I ventured to touch upon a subject, which, if the Board of Health have not already considered it, I would respectfully commend to their attention; to wit, the filthy condition of the “out-houses,” privies, &c., at many of the railroad-stations. I called the attention of the Superintendent to what is now known of the source of “typhoid-fever,” &c., and suggested that he hold the station-agents responsible for daily cleaning of the floors from the nuisances caused by children and night visitors, and for frequent “dusting down” of the vaults, according to the amount of use. I further suggested that some official, whose duty it is to pass over the road for other purposes, should be required to inspect weekly all “water-closets,” &c., and report to the Superintendent’s office all cases of neglect on the part of station-agents.

If you please to lay this before the President of your Board, and, if his judgment approves, before the full Board, some sanitary progress may be effected. I do not doubt that travellers have been unsuspectingly poisoned, as well as disgusted, by visiting from necessity the only places of seclusion which they could reach.

Very respectfully yours,

COLDWATER, MICH., Feb. 10, 1878.

J. H. BEECH, M.D.

A few days after, Dr. Beech forwarded to the Secretary the following communication, written to Dr. Beech in reply to the letter referred to above, by Mr. J. E. Curtis, Superintendent Lake Shore and Michigan Southern Railroad:—

SUPERINTENDENT’S OFFICE, MICHIGAN DIVISION,
LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY, }
TOLEDO, O., Feb. 12, 1878.

J. H. BEECH, M.D.

Dear Sir,—I was very glad indeed to receive your letter of the 10th inst. As an officer of this company I wish to express my thanks to you for the suggestions you make to me, of a matter that I am well aware is a disgrace and an evil; and no one has tried harder to remedy this than I have. “This fact I have found out, that just as far as we go to make places of this kind cleanly, and keep them in order, just so far the public step forward and assist us.” I take your letter as evidence of this fact. The remedies you suggest are those that for several years we have tried hard to enforce our men to use, as we know the benefits arising from their use. Unfortunately we have to contend with ignorance and false pride of ignorant men; and, as you are aware, these are the hardest of all things any one has to contend with. The great length of the road makes it hard to know at all times when things of this nature are neglected. I wish I could do more to

remedy this matter than I am doing, and I wish that the citizens of every town that our road runs through would make such an outcry that no employé at a station would dare have these places in any other condition than that of perfect cleanliness. Your letter I feel has strengthened my hands, and encouraged me to stronger efforts; and I shall at any time be pleased to have you criticise matters of this kind. Can you not write and publish an article calling the attention of all railroads, and of the public, to this matter? I think a great deal of good could be done through your medical society to arouse the attention of every one to the matter.

Yours truly,

J. E. CURTIS,

Superintendent Michigan Division.

Mr. Beech's letter transmitting the above is as follows:—

H. B. BAKER, M.D., *Secretary Michigan State Board of Health.*

Dear Doctor,—I enclose these pages to you, that the Board of Health may see how railroad superintendents accept this kind of interference. I do not think it proper for a private physician to publish warnings in newspapers, as Mr. Curtis proposes, lest it should make some people fear contagion, and, whenever they could avoid detection, commit the very nuisances which we desire to prevent.

The action or admonitions of your Board would have more influence over officers.

Very hastily yours,

J. H. BEECH.

Both of these communications were referred, at the April meeting of the Board, to Dr. Kedzie as chairman of the committee on "special sources of danger to life and health." At the October meeting of that year they were reported back to the Board, and referred to the committee on "disposal of excreta and decomposing organic matter," which committee now submits the following report:—

When we consider that many cases of typhoid-fever and diphtheria, and of other low forms of disease, are fairly to be attributed to the foul air from cesspools and privy-vaults, and when we remember how very foul the air is in and about many privies at railway-stations, and think how many people are compelled by the necessities of nature to breathe these foul exhalations,—not to speak of the extreme disgust to which they are subjected through more than one of their senses,—the matter of the arrangement and the care of these places becomes of public concern, and challenges the attention and careful thought of this State Board of Health.

There are many reasons why the arrangement, construction, and care of these necessary places of convenience, in conformity to the strict principles of hygiene, are difficult to be attained. Sufficient care is exercised by but very few private families even, to see that their own privy or water-closet is constructed with a view to real comfort and convenience, and cared for with strict and proper regard for the health of the household. It could hardly be expected, then, that such places at railway-stations, designed for travellers who may be compelled for once to use them, or for the employés around the stations, would be of equal comfort, cleanliness, or salubrity with those of private families.

These places are arranged and constructed, and indeed cared for, with the idea that the persons using them will do it but once, or at most seldom; and the thought is not entertained, that here by a moment's stay the seeds of disease and death may be taken into the system of many a victim, who, perhaps, in turn may become the centre of an epidemic among people far distant from the origin of the disease. Those who use these places, too, think they will use them but once, and that for a moment; and as the stench is already terrible, by reason of careless or thoughtless neglect, or by design, they often leave the place worse for their successors.

I have no doubt that railroad officials, whose duty it is to look after such matters, have, as a rule, as much intelligent interest in seeing that they are conducted in strict conformity to the laws of health, as Superintendent Curtis has expressed in his letter quoted above. One great difficulty seems to be that no person is compelled to take the daily trouble to look after the cleanliness and proper disinfection of the place.

These privies are usually at one end and under the roof of the station-houses, or annexed to them, the apartment for ladies opening out of their waiting-room, while that for the men is approached from without and through an area devoted to urinals. At a few of the most important stations they are, for both men and women, entered from within the station-house, and these generally are in good order and unobjectionable. But at the great majority of stations the nose, even at quite a distance from the house, indicates unmistakably at which end of the building the privy is situated; and many persons while waiting for an approaching train are disgusted and sickened by the odors that they cannot help inhaling, which arise from the putrescent filth in the vault near by.

At the smaller stations the privy is usually a little way from the station-house, placed over a vault which is seldom or never cleaned out or disinfected, and in which the stench from decomposing ordure and urine is sickening, often to vomiting. The floors and seats of these places are often covered and saturated with filth.

CAN THESE PLACES OF NECESSITY AND CONVENIENCE BE SO CONSTRUCTED, SITUATED, AND CONDUCTED AS TO BE ENTIRELY INOFFENSIVE AND INNOCUOUS?

Privies at the smaller stations should *never be placed over a vault*, unless the privy be moved every year, but should have a trough or receptacle under the seat, which should be removed, emptied, and returned once a week during the hot months, and once in two to four weeks during the remainder of the year. THE FLOORS of all such privies as are for public resort should be of some non-absorbing substance, but which can be easily and perfectly cleansed. Tile or cement would probably be the best material to use. THE SEATS in such places should likewise be non-absorbent, of a smooth hard surface, easily cleaned and kept so, and of such a form as to forbid the getting upon them with the feet. In the May, 1879, number of "The Plumber and Sanitary Engineer" is advertised perhaps the best form of a seat for such a place. The material should be of smoothly glazed porcelain. I refer to "Rhoad's Porcelain-seated Hopper Closet." There is "no woodwork about it;" it has "a perfectly non-absorbent seat." "The shape of the seat prevents a foothold, precluding the possibility of parties standing upon it when using it." A cut of this seat is shown herewith in Fig. 1.

Every such place under the roof of a station-house, where it is possible, should be a *water-closet*, and so arranged that the bowl or hopper should be flushed either by the act of sitting down upon the seat, or by that of opening the door to the closet.

Here I desire again to draw attention to "Rhoad's Porcelain-seated Hopper Closet, supplied by Henry C. Meyer and Co.'s No. 1 patent waste-preventing cistern, arranged to flush when the door is opened." "Just the thing for tene-

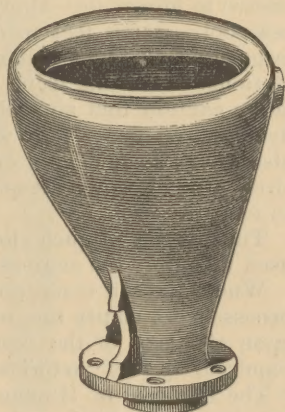


FIG. 1.
Rhoad's Patent Porcelain-Seated
Hopper.

ment-houses, where an ordinary water-closet would be destroyed by the abuse of careless people."

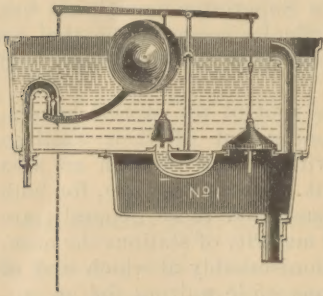


FIG. 2.

H. C. Meyer and Co.'s No. 1 Waste-preventing Cistern. (Sectional view.)

Figure 2 is a sectional view of this cistern. It is placed above the hopper, represented in Fig. 1, and connected with it in such a way as to secure a flushing of the hopper whenever the latter is used. It may be arranged in such a way as to flush the hopper when the closet-door is opened. It is manufactured by Henry C. Meyer and Co., 48 Cliff St., New York, through whose courtesy the committee has been supplied with the plates for Figs. 1 and 2.

Of course, when the station is within reach of a well-constructed sewer, the water-closet should be connected with it by a soil-pipe sufficiently large, and suitably trapped and ventilated.

THERE SHOULD NEVER BE A VAULT IMMEDIATELY UNDER A PRIVY IN OR ATTACHED TO A STATION-HOUSE.

Where there is no sewer near by, there may be a covered cesspool at a little distance from the station-house, and into this the water-closet should be emptied through a well trapped and ventilated soil-pipe. The cesspool should be well covered, and with the soil-pipe should be ventilated, if possible, into the chimney of the station-house; if that is not possible, by a large independent pipe rising twelve to fifteen feet above the level of the ground. In a porous soil, a large cesspool, say ten feet in diameter and ten to fifteen feet deep, well walled with large stones without cement, will not become full for years, even at our largest stations. Both the urine and the ordure should be conducted into it. I would add a caution that no such cesspool should be allowed within three hundred or five hundred feet of any well where water is drawn for domestic use; and would also say that the danger of contaminating the source of supply of water in a large circle around such a cesspool is, in the judgment of this Board, so great as ought to forbid its use.

The cisterns of such closets can be easily supplied with water from the tanks used to supply the engines.

Where the soil is not porous, or if a water-tight cesspool be put in, it will be necessary to empty the receptacle once a year, or perhaps oftener, depending upon the size of the cesspool. This can easily be done as often as may be required, by the "odorless excavating apparatus," as described in my paper on "The Disposal of Human Excreta," printed in the Report of the Secretary of this Board, for 1875, or by the Ames Eagle Odorless Excavating Apparatus.

As showing something of the excellence which has been attained in the manufacture of apparatus for the safe and inoffensive removal of human excreta, and therefore of the culpability of that neglect and disregard of human health and comfort which allows vaults reeking with their sickening odors and with germs of disease to remain an annoyance to the public, or to be made a greater nuisance by injudicious methods of emptying them, three plates (Figs. 3, 4, and 5, pp. 5, 6, and 7) have been secured illustrative of apparatus manufactured by the Eagle Odorless Apparatus Company, 622 Sansom St., Philadelphia, Penn. Fig. 3, below, represents the apparatus as set up and ready for use in actual removal of the contents of a vault shown at the left hand of the plate. Fig. 4 represents part of the "pitting" apparatus, so called, which is used for removal from the pit or vault of such contents as cannot readily be removed by

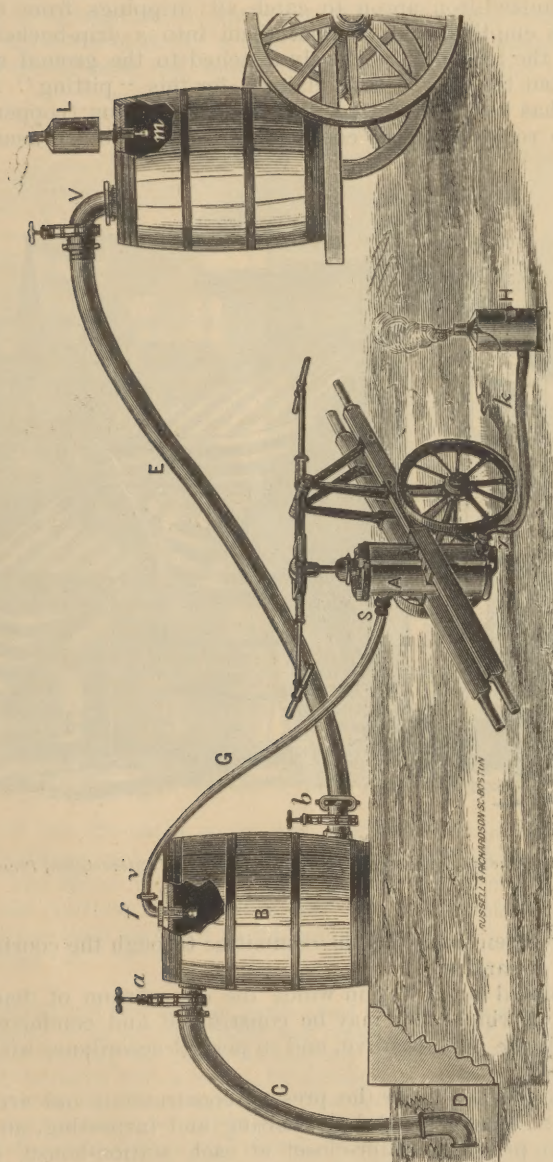


FIG. 3.

Excavating Apparatus of the Eagle Odorless Apparatus Company, of Philadelphia, Penn.

A, the pump; B, the pump-receiver; C, the suction-hose and connections; D, foot-pipe (submerged); E, leading-hose and connections; G, air-hose; H, furnace-deodorizer; L, furnace-deodorizer; V, goose-neck valve; a, upper gate; b, gate.

pumping. It consists of a pitting-barrel for receiving the contents of the vault, buckets for removing the contents from the vault, an open furnace for burning the heavier gases, and a close tent to screen the work from sight and prevent the escape of offensive gases. The pitting-barrel has a close-fitting cover, making it air-tight, and a galvanized-iron apron to catch all drippings from the bucket when the buckets are emptied, and conduct them into a drip-bucket beneath. During the operation the tent-cloth is closely fastened to the ground and to the sides of the privy about the door.¹ It is claimed for this "pitting" apparatus, that, when the vault has been disinfected with sulphate of iron (copperas) a few hours previous to the removal of the contents, no offence to the senses exists.



FIG. 4.

Pitting Apparatus of the Eagle Odorless Apparatus Company, of Philadelphia, Penn.

Plates 3, 4, and 5 have been loaned to the committee through the courtesy of the manufacturers of this apparatus.

I am sure I have pointed out a way in which the opprobrium of depot-privies may be removed, and in which they may be constructed and conducted without offence to the most delicate and sensitive, and in perfect accordance with the laws of hygiene.

How can the care of privies under the present construction and arrangement of them be improved? The duty of daily visiting and inspecting, and putting in perfect order, each privy or water-closet at each station-house, should be strictly required of some employé at each station, to see that the floor and the seats are kept completely clean. The vaults or receptacles should be thoroughly dusted down daily with an abundant supply of ashes or dry earth, and should be

¹ As shown in Fig. 5, p. 7.

thoroughly disinfected with lime, copperas, or carbolate of lime, as often as twice a week during the warm months.

But no care of a vault under or very near to a station-house, however it may be disinfected, can make it consistent with the laws of hygiene. In small stations, and indeed in those of more importance, where the closet cannot be supplied with water, the dry-earth closet of a cheap and simple form should be used instead of a vault. I would here call attention to what is perhaps the cheapest and the



FIG. 5.

Tent-cloth Closed for Use of Pitting-Apparatus.

best form of the dry-earth closet yet proposed. It is described in a work on "House Drainage and Water Service" (pp. 272, 273), by James C. Bayles, editor of "The Metal Worker;" and also in "The Metal Worker" for June 28, 1879. By the courtesy of the editor, Mr. Bayles, a plate illustrating this form of earth-closet has been supplied to the committee. In "The Metal Worker" it is thus described:—

"The cheapest and best form of earth-closet known to us is shown in the accompanying illustration. It is a box without any bottom, and with a double cover, as shown. The reason for omitting the bottom is, that any thing which may spill around the receiver is more easily removed with a broom, by moving the closet, than it would be if the box had to be overturned and so emptied. The receiver is a galvanized coal-hod of large size, and the box needs to be only high enough to allow this to stand within it. When not in use, both covers may be kept closed. When used, the outside or top cover is thrown back. After use, the seat is raised, and a quantity of dry earth, or the fine siftings of coal-ashes, is thrown in with a small fire-shovel. The earth or ashes is kept at hand in a convenient receptacle; or the box may be made in two parts, one for the seat and receiver, and the other for the earth or ashes. The cover of the earth-box should, in that case, be a continuation of the seat, so that when the seat is raised the earth-box is uncovered at the same time. A small quantity of earth or ashes should be thrown into the receiving vessel

before it is used, to absorb liquid excrement, and prevent the solid from sticking to the metal surface. If as much ashes or earth is thrown into the receiver every time it is used as is necessary to cover the offensive matter completely, the receiving vessel will require no attention until it is full. It is then emptied, and returned to its place. If the closet

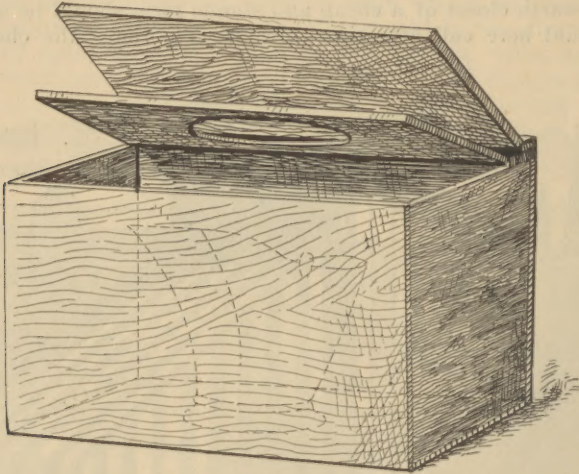


FIG. 6.

A Cheap and Convenient Earth Commode.

is managed with a due regard to decency, the work of emptying is no more disagreeable than that of emptying a bucket of damp ashes. There is nothing about it unpleasant to sight or smell."

If this form of earth-closet should be adopted, of course it would require the faithful daily attention of some employé about the station.

These suggestions are respectfully submitted for the consideration of those persons who have the management and superintendence of railroads in Michigan.

H. O. HITCHCOCK, M.D.,

Committee on Disposal of Excreta and Decomposing Organic Matter.

